Verifying the Agreed Framework: Overview

January 2001

Background Materials for the 2nd Workshop of the Joint CISAC–CGSR Project
To Evaluate Security and Safeguards of the DPRK's Nuclear Reactors
Under the Agreed Framework of 1994

KEDO, Verification, and the Challenges to Constructive Engagement with North Korea

The Agreed Framework (AF) between the United States of America and the Democratic People's Republic of Korea (DPRK), signed in Geneva on October 21, 1994 has become the centerpiece of recent U.S. efforts to reduce the threat of conflict with North Korea. In particular, it seeks to bring the DPRK into compliance with its obligations under the Nuclear Non-Proliferation Treaty (NPT) not to acquire nuclear weapons. The AF document sets goals, outlines programs, initiates an U.S.-led nuclear-power consortium, and notes linkages. The AF refers to a wider range of diplomatic and international security initiatives and is meant to reinforce others.

The impact of each step taken or not taken under the AF will have a significant impact broadly, including on North–South Korean relations, economic and humanitarian interaction, East Asian security, U.S. national security, American foreign policy, Western alliances, and nonproliferation in the region and around the globe. The larger message of the agreement is clear—as North Korea complies with international norms, relations with the outside world increasingly will be normalized. Aid and trade are to grow with the reduction of military threats and the expansion of political dialog and contacts. As its engine, the AF sets in motion a remarkable joint nuclear-energy project that is our focus here.

Technical Questions, Strategic Implications

In this study, we examine several issues related to the cooperative nuclear project, especially monitoring and verification of nuclear-material production in the DPRK. In doing so, we are vividly aware that success or failure in meeting the technical challenges posed by that project can have a wider impact. Compressed schedules, cultural differences, and a limited history of cooperation with North Korea are among the internal factors that could result in a failure to meet program deadlines or objectives. External factors that could derail the process are perhaps even more numerous and involve major conflicting interests. Thus, in support of our technical analysis of verification issues, we have highlighted a number of scenarios that could come into play because of developments both within and outside the reactor project. Such scenarios must influence how we think about verification. Each also has overarching strategic implications.

We recognize the primacy of these broader strategic considerations even if our interest here is the programmatic heart of the AF—its procurement for the DPRK of two Light-Water Reactors (LWRs). The new reactors are being provided by an organization created for that purpose, the Korean Peninsula Energy Development Organization (KEDO). Procurement and construction by KEDO of these reactors compels the relevant parties to find ways to cooperate.

Provision of these reactors, however, is contingent upon Pyongyang resolving with the International Atomic Energy Agency (IAEA) existing concerns that the DPRK is developing nuclear weapons. The triggers leading to the confrontation in early 1993 were apparent discrepancies in Pyongyang's initial nuclear declarations to the IAEA. At a

minimum, these suspect discrepancies must be resolved for reactor construction to proceed to the installation of certain critical nuclear components.

Even if a mutually acceptable agreement on declarations is reached with the IAEA, further progress is linked inevitably to greater confidence that North Korea has abandoned its nuclear-weapons program. KEDO is a major part of that confidence-building, but only part. Mere completion of the reactors cannot ultimately be the standard by which success is judged. Still, the nuclear-reactor project serves as a major pacemaker and bellwether of the status of the AF and its nonproliferation objectives.

Geopolitics and Nuclear Technology Cooperation

Inherently, the AF seeks to support management of relations between adversaries trying to find their way to safer ground in a changing world. The U.S. has been motivated in creating the AF as much by the risks of failing to act as by the prospects for success. The AF has become our most ambitious laboratory for defining and assessing "constructive engagement." As the recent restatement of the grand compromise by former Secretary of Defense William Perry and the related negotiations on North Korean ballistic missiles suggest, the AF is subject to "re-invention." Indeed, it is itself a reconfiguration of the earlier agreements it references on North–South reconciliation and denuclearization of the Korean peninsula. This variability in implementing mechanisms is inevitable in any framework built upon a process in which a regime such as North Korea frequently tests whether it can gain more from delay, brinkmanship, and even threats of war than from the reduction of tensions and expansion of cooperation.

The AF also brings together allies balancing their collective and separate interests. For the United States, Japan, and the Republic of Korea (ROK), the AF tests their ability to work together successfully under post-Cold War conditions to reshape the Cold War legacy of a divided Korea. It remains a test they could still fail, and the price of failure could well be fissures between friends as well as dangerous new confrontations with Pyongyang. Our allies weigh constantly whether we are too forceful or too restrained, a debate echoed in the domestic debate in many capitals including our own. Despite some uncertain steps, however, the U.S. and its allies thus far have traveled in the same general direction, retaining their cohesion in the face of both euphoria and disappointment.

Implementation of the AF requires engagement with China and Russia and to some degree, the nations of Western Europe and others. These interactions also reflect the uncertainties of a world in transition. What is on one day a common cause becomes on another day a source of tension. Not all of the issues involved are grave, but some of the political concerns and security calculations of the key nations involved are serious, even vital. Clearly, the outcome of the Korean engagement matters greatly to Chinese and Russian strategic assessments of security in Northeast Asia, just as it does to the United States and its allies in Asia. Success in achieving reductions in tensions on the Korean Peninsula could aid significantly evolution of relations with Russia and China, but North Korea also has the potential to be a tragic spoiler in what had been substantial reductions in the adversarial psychology of the great military and economic powers.

The implications of the AF are important globally as well. As one of the most difficult remaining challenges to an almost universal commitment to nuclear non-proliferation, success or failure in stopping the North Korean nuclear-weapons program can have a powerful impact on other nations. This includes those seeking weapons such as Iraq and Iran and those such as Japan, South Korea, and Taiwan that have thus far been willing to forgo nuclear weapons they could easily manufacture. The precedents set with North

Korea under the AF impact also on the standards applied by other nations in their nuclear trade and technology transfer.

Through the AF, we seek to use nuclear-energy cooperation with North Korea to strengthen the global non-proliferation regime, but not every important actor has chosen to interpret it that way. Moscow has already cited the AF as a rationale for Russian nuclear-reactor deals with Iran, and New Delhi suggests it is evidence of a double-standard nuclear suppliers have applied against India. Indeed, Indian hawks have asserted that the respect given to North Korea because of its nuclear-weapons program further validates India's own weapons program. Whether real or contrived, such assertions remind us that our diplomacy in Northeast Asia is watched closely elsewhere.

The grand game of carrot and stick with North Korea is meant to reinforce international norms. It is built upon the notion that abandoning nuclear-weapons programs brings tangible benefits, but this engagement could also suggest to those already receptive that nuclear blackmail might pay. Success in bringing about compliance with the NPT in the near-term, however, will still leave us with the classic long-term question that can be applied to many parties to the NPT: namely, will easier access to technology under the NPT now facilitate future nuclear weapons efforts? Thus, the value of the AF must be judged ultimately by the net contributions it makes to international security in the region and around the world. The full measure of its merit is to be found in that broader policy context.

Means versus Ends

That the AF is bigger than just the creation of KEDO and the provision of two new safeguarded reactors to North Korea deserves this special mention up front. The bigger picture also deserves further examination after our analysis of the prospects for KEDO and verification of its safeguards has been presented. The core of our study is purposefully narrow—examining the prospects for verification of the nuclear-reactor program, but we believe that understanding the implications of each step or misstep from a broader perspective is even more important. Completion of the KEDO reactors would be a hollow achievement if nonproliferation goals were not achieved. Failure to complete the reactors might not be a waste if our international security objectives are otherwise accomplished. A number of paths may reach our goal, but here we build upon the current approach. In undertaking this study of the KEDO reactors, we are acutely aware that KEDO is a means and not an end, just as the AF is a means and not an end.

In this study of the interaction of technology with policy—in this case, DPRK's compliance with the NPT—we reference the history of U.S. interactions with North Korea on the nuclear question. We do not intend here to re-open the debate over the wisdom of the AF or the process by which it was achieved. We begin our substantive analysis with the AF as it now stands. Our objective is enhancing the prospects that it will achieve its goals. We examine technical and programmatic hurdles to be overcome in the implementation of the current KEDO reactor program, and we explore means to ensure that verification milestones and standards can be met. We also seek to illuminate the wider implications of success or failure at various stages. This inevitably raises questions about alternative tactics and even exit strategies. If the KEDO reactor program is delayed or derailed, will we still be able to achieve our goals? And by what means? In some cases, our analysis may suggest the need for advance consideration of options beyond the scope of this discussion.

Program Management, IAEA Interaction, and Challenges to Preventive Diplomacy

Implementing even the KEDO portion of the AF is already behind schedule. Difficult program management, business, and legal decisions pertaining to the LWR and Nuclear Cooperation Agreement are ahead. For example, under U.S. law, a nuclear cooperation agreement must be reached, but North Korean noncompliance with the NPT presents legal and political obstacles. The "when" and "what" of the U.S. nuclear cooperation agreement is thus complicated by the hovering question of "how?" Key business and budget strategies must await agreement on liability, specific arrangements for fresh-fuel supply and spent-fuel disposition, clarification as to participation in day-to-day reactor operations, availability of an integrated infrastructure such as a distribution grid in DPRK, etc. Thus, important questions of "who" and "how much" also remain. These implementation uncertainties all affect confidence in verification and on calculations of the risks and benefits of the AF, especially to the degree that timing is viewed as a critical factor.

Verification of initial declarations and implementation of safeguards by the IAEA over the necessary DPRK nuclear infrastructure create a number of "make or break" milestones. Delay in reaching these moments of truth has not made them any easier. Indeed, the passage of time may make some issues more difficult to resolve. Recognition that acceptable confirmation of initial or even revised declarations may be problematical has already reopened debate over minimum acceptable requirements. Even the question of whether pre- or post-Iraq safeguards should be applied remains open.

This in turn is but a subset of the larger question of whether mere verification that material has not been diverted from indigenous reactors and facilities is sufficient. Certainly, the real nuclear threat environment is larger. Although it is true that the IAEA special inspections that resulted in confrontation in 1993 were related to efforts to resolve discrepancies in declarations, the rejection of special inspections called into question as well the ability to verify that no broader nuclear-weapons program is underway by other means.

We have long focused on the impressive efforts by which Pyongyang has acquired indigenous capability to produce nuclear weapons, especially in light of its political and economic isolation. In this age of globalization of technology, a deeper perspective may be necessary. The "loose nukes" and "loose nuclear material controls" associated with the breakup of the Soviet Union, and the emergence of gray and black markets among nations of concern such as those described by the Rumsfeld Commission suggest that indigenous sources of nuclear capability are only a part of the problem. In short, even as program slippage puts off the implementation of required verification of KEDO, nuclear verification problems outside KEDO can in turn stall implementation of the AF.

Implementation and verification of the KEDO reactor programs and with them the AF face other large, crosscutting issues as well. Uncertainty about Korean capability and intentions was greatly increased in the face of the provocative testing of long-range missiles including one launch over Japan of a missile Pyongyang subsequently declared to be a space launch vehicle. Whatever it says about intentions, DPRK's willingness to sell ballistic missiles to other troubled regions of the world such as the Middle East and South Asia has underscored the dangers associated with Pyongyang's possible two-way trade in Weapons-of-Mass Destruction (WMD) technology with other potential proliferators. What goods other than cash does North Korea get in return for its missile and other sales? To deal with missile launches and military trade, the U.S. has been negotiating on

terms to obtain a freeze on the DPRK's missile program. Engagement has begun on this issue, but the prospect of being confronted with one WMD or military challenge after another is worrisome given the many types of weapons and means of delivery that might be deployed or marketed.

Trade in WMD reminds us that Pyongyang has continuously sought new access to resources and new bargaining leverage. Whether raising the specter of war, threatening to withdraw from the NPT or other agreements, or highlighting the economic misery of its own people, the DPRK has become adept at identifying means to strengthen its negotiating positions. Movement toward a more comprehensive approach as embodied in the Perry and Armitage Reports seeks to deal with this problem. Such approaches broaden the arena of engagement by expanding the linkage of progress on verification and security with progress on political normalization and economic benefits. Such linkage is explicit in the AF just as it was explicit in the earlier efforts it refers to such as the 1991 North–South Joint Declaration on the Denuclearization of the Korean Peninsula and other aspects of the North–South dialog.

Such a comprehensive strategy may reduce the tendency for both sides to become preoccupied with tactical leverage at the expense of strategic advancement. More importantly, it recognizes the fundamental substantive relationship between enhancing real security including verification and broader human interactions and transparency. Emphasis on a more comprehensive strategy, however, may also subject progress on the KEDO reactor project to a less buffered linkage to the ups and downs of engagement and confrontation. Thus, issues such as family reunification and high-level meetings such as the recent Summit by the Heads of State of the two Koreas may add to the dynamics of KEDO project management and verification.

Dynamics of Technology/Policy Interaction

The KEDO program lies squarely at ground zero of a process that has been routinely punctuated by:

(1) delayed implementation,
(2) disagreement over compliance,
(3) near dissolution of fundamental agreements, and
(4) brinkmanship including saber-rattling.

Nearly every crisis the AF process has experienced in the last six years had been experienced in some form before the AF was reached. Nearly every such crisis may happen again. Prudence dictates analyses of these and possible future crises. This seems inherent in a process involving efforts at cooperation by parties deeply divided over political, economic, and security objectives and with fundamentally different views on openness and transparency.

Verification issues take on greater significance in such an environment. Indeed, verification issues have been associated more or less with most of these past confrontations with North Korea over the nuclear question. As we have examined verification of nuclear-material production, we have tried to keep this in mind. To understand how verification might become involved in a crisis again, we must look beyond the simple history of implementation of IAEA obligations. We must examine several paths that parallel interaction between the IAEA and the DPRK. Notable among these parallel paths are:

(1) the total nuclear programs of the DPRK (military and civilian),
(2) related bilateral and regional efforts to engage Pyongyang on the nuclear question,
(3) other North Korean and regional military activities,
(4) broader NPT related activity,
(5) wider defense and arms control developments, and
(6) the larger process of political change in the Koreas and around the world.

These interrelated dynamics work for and against confidence. In some cases, developments in the different arenas for cooperation, competition, and conflict simply reflect progress or regression on the nonproliferation front. In other cases, they reinforce progress or amplify setbacks. Thus, positive feedback may result in a *de facto* hierarchy of security-building arrangements, but negative feedback may amplify setbacks and encourage the widening of fissures. In some cases, strategic or tactical considerations involving either international or domestic politics may result in progress in one arena being deliberately associated with stalemate or loss in another.

Much has been written on the motivations and negotiating tactics of the DPRK, the ROK, the U.S. and others involved with the North Korean nuclear debate. Although the dynamics of interaction frequently repeat themselves, much disagreement exists among experts over interpretation. Is North Korea afraid that resolving uncertainty will reveal a secret program they claim does not exist? Or, alternatively, is Pyongyang afraid to reveal that the program is thus far unsuccessful, thus depriving it of bargaining power? Both could be true at different times or even at the same time.

By What Standard Shall We Judge, and When?

Our primary interest in this study is verification of nuclear-material production and the reduction of risk associated with diversion or breakout. Fundamental to any such effort is the ability to monitor activities. Technology such as instrumentation, sensors, sampling, tagging, diagnostics, and communications contribute significantly here. Yet, verification has always been a larger process than monitoring. Verification assessments involve:

(1) the ability to make judgments about the meaning of obligations,
(2) the centrality of provisions,
(3) the probabilities of cheating,
(4) the risks associated with non-compliance,
(5) the timeliness of warning obtained,
(6) the efficacy of redress or enforcement, and
(7) other related costs and gains.

Thus, risks and benefits must be weighed against their impact on the ends for which any agreement is a means and against the consequences and options if those ends are not met. Verification may never be perfect, but effective verification can contribute significantly to confidence. Inadequate verification can lead to overconfidence and miscalculation.

In the language of the AF, the definitions of clear success or obvious failure are relatively easy to understand. If the DPRK truly abandons its nuclear-weapons programs, the central goal will have been achieved. Effective verification of the AF can help us know if this has happened. If the DPRK deploys nuclear weapons, the AF will have failed to meet its explicit objective. Verification measures may give us earlier indications of this undesired outcome. If the DPRK uses the AF for continued leverage, verification measures may help us manage this dynamic more effectively.

Yet, the AF aspires to contribute more. If the military threat on the Korean Peninsula is greatly diminished and relations among the nations involved are normalized on a sound basis, the achievements of the AF will be even more solid. Cooperation on verification may facilitate normalization. Indeed, it may facilitate political change in North Korea. If tensions return to Cold War levels, confidence in actual achievements of the AF will be reduced. Compliance disputes under the AF can be both a cause and an effect of such tensions.

Clear success and obvious failure may be easiest to understand, but in the history of negotiations with North Korea, success and failure are normally not so clear. As the above discussion of the dynamics of engagement on the Korean peninsula suggests, every success brings with it a price. Every advance stimulates the grounds for new steps backward. The value of every specific objective gets re-evaluated. If war is avoided, what has been lost? If war is only delayed and ultimately made even more destructive, what has been gained? Will delay mean more or less chance that nuclear weapons will be deployed or even used by North Korea? Will delay now mean more or less reform, and over what timeframe and circumstances? Will delay mean that international cohesiveness with allies, with other powers, at the IAEA or in the U.N. Security Council likely to be more or less supportive of nonproliferation compliance on the Korean peninsula or other U.S. foreign policy objectives? These larger questions must be kept in mind as we examine potential failure modes and consider means to prevent failure.